What is claimed is:

1. A detectable label comprising a particle doped with at least one rare earth element.

2. The label of claim 1, wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof.

3. The label of claim 1, wherein the particle includes a plurality of rare earth elements arranged in a pattern or array to provide a unique identification code for the particle.

4. The label of claim 3, wherein the label is adapted to detect an analyte in a sample or interaction of two molecules.

5. The label of claim 3, wherein the particle includes a glass microparticle having a pattern of rare earth elements shutter masked thereon.

6. The label of claim 3, wherein the particle includes a cross-section of a fiber including an array of layers, each of the layers having an optical property different from an optical property of adjacent layers.

7. The label of claim 6, wherein the fiber includes materials selected from the group consisting of inorganic materials, glasses, polymers and combinations thereof.

8. The label of claim 6, wherein the layers are arranged concentrically.

9. The label of claim 6, wherein the layers are arranged across a cross section of the fiber.

10. The label of claim 9, wherein one of the layers varies in thickness from the other layers.

11. The label of claim 8, wherein one of the concentric layers varies in thickness from the other layers.

12. The label of claim 6, wherein the layers are arranged concentrically, and each concentric layer has a spectral emission different from the spectral emission of adjacent concentric layers.

13. The label of claim 6, wherein the particle is made from glass, the layers are arranged across a cross section of the fiber and at least one of the layers has a spectral emission different from the spectral emission of the other layers in the particle.

14. The label of claim 6, wherein the particle includes a chemical functional group attached thereto for interaction with the analyte or biomolecule.

15. The label of claim 14, wherein the particle includes a surface treatment to facilitate binding or attachment of biomolecules thereto.

16. The label of claim 1, wherein the particle includes a surface treatment to facilitate binding or attachment of biomolecules thereto.

17. The label of claim 3, wherein the label includes a chemical or biological functional group attached thereto for interaction with the analyte or biomolecule.

18. The label of claim 17, wherein the chemical functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

19. The label of claim 18, wherein the layers are arranged in a manner that can be used to identify the chemical functional group.

20. The label of claim 6, wherein the particle includes a chemical or biological functional group attached thereto for interaction with the analyte.

21. The label of claim 20, wherein the chemical functional group is selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

22. The label of claim 21, wherein the layers are arranged in a manner that can be used to identify the chemical functional group.

23. The label of claim 22, wherein the fiber is made from glass, and the layers are doped with elements selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U, and combinations thereof.

24. The label of claim 6, wherein the fiber has a cross-sectional dimension of less than 1 millimeter.

25. The label of claim 3, wherein the particle is derived from a cross-section plurality of fibers arranged in a bundle, and at least one of the fibers including a rare earth dopant different from the rare earth dopant contained in at least one of the other fibers in the bundle.

26. A method of detecting an analyte in a sample comprising placing the sample in contact with a particle doped with at least one rare earth element, the particle including a chemical functional group and a pattern thereon to provide a label for the particle; and

monitoring the sample for the presence or absence of the analyte.

27. The method of claim 26, wherein particle includes a cross section of a glass fiber having a cross-sectional dimension less than about one millimeter.

28. The method of claim 27, wherein the particle includes a plurality of layers arranged to provide the pattern.

29. The method of claim 28, wherein the layers are arranged concentrically.

30. The method of claim 29, wherein at least one of the layers has a different thickness from at least one of the other layers.

31. The method of claim 28, wherein the layers are arranged across a cross section of particle.

32. The method of claim 31, wherein each of the layers has different thickness from the other layers.

33. The method of claim 23, wherein each of the layers includes a rare earth element having a spectral emission that is different from the spectral emission of at least one of the other layers.

34. The method of claim 24, wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U and combinations thereof.

35. The method of claim 26, wherein the chemical functional group is selected from the group consisting a nucleic acid, an antibody, a protein, and an enzyme.

36. The method of claim 31, wherein the layers of the particle are made from different materials selected from the group consisting of inorganic materials, glasses, and polymers.

37. The method of claim 26, wherein the particle includes a glass microparticle having rare earth elements shutter masked thereon to provide the pattern.

38. A method of manufacturing an identifiable label for detecting the presence of an analyte in a sample or interaction of biomolecules comprising:

drawing a fiber having an array of regions of differing optical properties, the array of regions arranged in a manner to identify the fiber; and

contacting the fiber with a chemical functional group selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

39. The method of claim 38, wherein the array of regions includes a rare earth element.

40. The method of claim 38, further including the step of laterally slicing the fiber into a plurality of cross sections.

41. The method of claim 40, wherein a femtosecond pulse laser is used to slice the fiber.

42. The method of claim 40, further including the step of providing surface chemistry on the fiber cross section to facilitate attachment of biomolecules thereto.

43. The method of claim 42, further comprising the step of arranging the array of regions concentrically.

44. The method of claim 42, further comprising the step of arranging the array of regions across a cross section of the fiber.

45. The method of claim 44, wherein the fiber is glass, and further comprising the steps separating the array of regions with a dissolvable glass and removing the dissolvable glass.

46. The method of claim 44, further comprising the step of providing at least one layer made from a glass and at least one layer made from a polymer.

47. The method of claim 39, wherein the rare earth element is selected from the group consisting of Ce, Pr, Nd, Sm Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, U and combinations thereof.

48. A method of manufacturing an identifiable label for detecting the presence of an analyte in a sample or interaction of biomolecules comprising:

providing a particle and shutter masking a pattern thereon to provide a unique identification code for the particle; and

contacting the particle with a chemical functional group.

49. The method of claim 48, wherein the particle includes a microsphere.

50. The method of claim 48, wherein the pattern includes a plurality of rare earth elements.

51. The method of claim 48, wherein the chemical functional group facilitates attachment of biomolecules to the particle.

52. The method of claim 51, wherein the biomolecules are selected from the group consisting of a nucleic acid, an antibody, a protein, and an enzyme.

53. The method of claim 48, further including the steps of depositing the particles in a microwell plate including a plurality of microwells and selectively depositing rare earth materials in the microwells to provide a unique identification code for the particles contained in each microwell.

54. A method of detecting multiple analytes in a sample comprising the steps of:

providing coded particles, each of the particles having an analyte associated therewith;

illuminating the particles with a light source;

obtaining a spectral image of the particles; and

utilizing the spectral image to decode the particles.

55. The method of claim 54, wherein the spectral image of each individual particle includes the fluorescent emission from at least two different rare earth elements.

56. The method of claim 55, wherein the rare earth elements are arranged in a pattern to provide a unique code for each particle.

57. The method of claim 56, further comprising the steps of imaging the particles and decoding the pattern to identify the analyte associated with each particle.